

Appl. No. 10/021475  
Amdt. dated December 20, 2004  
Reply to Office action of August 25, 2004

**Amendments to the Specification:**

Please replace paragraph [0001] with the following amended paragraph:

**[0001]** The invention provides a method of shaping optical storage ~~devices~~ discs (OSD) by placing an OSD between a die set having a male die and female die corresponding to a desired shape and advancing and retracting the die set so as to die-cut the OSD to the desired shape to form a shaped OSD, the shaped OSD products formed therefrom and the die set. The process of the invention is particularly effective in shaping recordable OSDs ~~devices~~ without damaging the data layer of the OSD adjacent the cut edge.

Please replace paragraph [0007] with the following amended paragraph:

**[0007]** Past techniques for shaping discs to shapes other than the standard 12 cm circle format have primarily used computer controlled shaping devices which utilize a high speed rotating cutting spindle to create a desired ~~shaped~~ shape from a circular blank. While this technique is effective in efficiently shaping large quantities of discs, the process often damages the data storage media immediately adjacent the edge thereby affecting the visual appearance of the shaped disc as well as reducing the amount of data storage media which may lead to read and write errors with respect to any data stored thereon. This problem is particularly noted in the shaping of read-write compact discs, where ~~Where~~ the data storage media is more fragile than that of a read-only CD.

Please replace paragraph [0012] with the following amended paragraph:

**[0012]** The invention generally relates to a method for shaping optical storage discs and shaped optical storage ~~devices~~ discs prepared by the method.

Please replace paragraph [0013] with the following amended paragraph:

**[0013]** In accordance with the invention, there is provided a method of shaping optical storage ~~devices~~ discs (OSD) comprising placing an OSD between a die set having a male die

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and female die corresponding to a desired shape and advancing and retracting the die set so as to die-cut the desired shape to form a shaped OSD.

Please replace paragraph [0017] with the following amended paragraph;

**[0017]** The invention is described with reference to the following drawings in which:

**Figure 1** is a plan view of a typical compact disc showing the outline of a shaped optical storage device disc (OSD) in dotted lines;

**Figure 2** is a perspective view of a die cutting system in an open view with an unstamped OSD in dotted lines shown thereon;

**Figure 2A** is a schematic side view of a die cutting system showing details of a cutting edge in accordance with one embodiment of the invention;

**Figure 2C** is a schematic side view of a die cutting system showing details of the position of the male and female dies during removal of a cut disc in accordance with one embodiment of the invention;

**Figure 2D** is a schematic side view of a die cutting system showing details of a female die having an inner plate biased against the upper surface of the male die in accordance with one embodiment of the invention.

**Figure 3A** is a sketch of the edge of a stamped OSD in accordance with the invention showing an undamaged data layer and vertical scratches on the disk disc-edge; and

**Figure 3B** is a sketch of the edge of a OSD prepared by a router in accordance with the prior art showing damage to the data layer and horizontal scratches on the disk disc-edge.

Please replace paragraph [0018] with the following amended paragraph:

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**[0018]** With reference to the Figures, a method and apparatus for shaping optical storage devices discs (OSD) is herein described.

Please replace paragraph [0019] with the following amended paragraph:

**[0019]** More specifically and with reference to Figure 1, a standard circular CD/DVD is shown, having a data layer that extends from an inner circumference adjacent the central hole of the CD/DVD, to the periphery of the CD/DVD. In accordance with the invention, a disc having a non-circular shape 12 may be produced as shown in the dotted lines.

Please replace paragraph [0020] with the following amended paragraph:

**[0020]** With reference to Figure 2, a die set including a male portion 20 and female portion 22 is shown. The male portion has a central post 20a having an upper edge 20b corresponding to the desired optical ~~device~~ disc shape and elevated above base 20c by walls 20d. A centering pin 20e is also preferably provided to ensure accurate alignment of the ~~disk~~ disc with the die set and to prevent movement of the OSD with respect to the dies during cutting. Similarly, the female portion 22 includes opening 22a having a lower edge 22b and side walls 22c which corresponds in shape to the post 20a within body 22d. The post 20a matingly engages with the opening 22a such that walls 20d and 22c slidingly engage with one another to desired engineering tolerances. The male and female portions 20 and 22 are mounted within a die press apparatus and guide pins (not shown) to align and to advance and withdraw the male and female portions with respect to one another. As shown, the base 20c and body 22d include appropriate guide pin holes for mounting guide pins to ensure precise alignment as the base 20c and body 22d are advanced and withdrawn with respect to one another. A standard press for the stamping of sheet metal or custom built presses based on an eccentric cam, hydraulic or pneumatics cylinders etc. may be employed in the shaping function.